

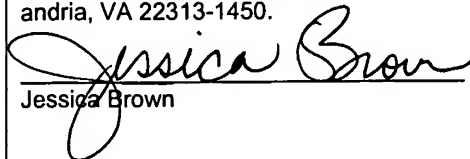
10/647,932

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF MAILING

I hereby certify that on March 30, 2005, which is the date I am signing this certificate, I am depositing this correspondence the United States Postal Service, first class mail, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.


Jessica Brown

Applicant: PAIR et al.

Serial No.: 10/647,932

Filed: March 19, 2004

Title: PARTIALLY REAL AND PARTIALLY
SIMULATED MODULAR INTERACTIVE
ENVIRONMENT

Atty. Docket No. 028080-109

Examiner: LAY, Michelle K.

Group Art Unit: 2673

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.56

Sir:

Pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98, Applicant brings the references listed on the attached Form PTO-1449 to the examiner's attention. 37 C.F.R. § 1.56. These references may be material to examination of the above-identified application. Please do not construe the filing of this information disclosure statement as a representation that applicant has made a search (37 C.F.R. § 1.97(g)), or as an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists. We enclose copies of the cited documents.

This Information Disclosure Statement is being submitted:

- ☐ 1. Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; or before the mailing date of a first Office action on the merits, and therefore, Applicant believes no fee is required;
- ☒ 2. After the period specified in paragraph (1) hereinabove of this section, but is being filed before the mailing date of either a final action under 37 CFR 1.113, or a notice of allowance under 37 CFR 1.311, or an action that otherwise closes prosecution in the application, and is accompanied by one of the following:

04/04/2005 AWONDAF1 00000001 10647932

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- ☐ (a) A statement that either:
- (i) Each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement;

OR

- (ii) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement;

OR

- ☒ (b) The fee of \$180 for filing of an Information Disclosure Statement as set forth in 37 C.F.R. 1.17(p).

- ☐ 3. After the period specified in paragraph (2) of this section, but is filed on or before payment of the issue fee and is accompanied by both:

- ☐ (a) A statement that either:
- (i) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement;

OR

- (ii) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement;

- ☐ (b) The fee of \$180.00 for filing of an Information Disclosure Statement as set forth in 37 CFR 1.17(p).

Applicant would appreciate the Examiner initialing and signing a copy of Form PTO-1449, transmitted herewith, indicating that the information has been considered and made of record herein.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the

cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 501946** referencing order number **028080-109**.

March 30, 2005



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Los Angeles, CA 90067
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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

APR 01 2005

Complete if Known

Application Number	10/647,932
Filing Date	August 26, 2003
First Named Inventor	PAIR et al.
Art Unit	2673
Examiner Name	LAY, Michelle K.
Attorney Docket Number	28080-109

Sheet 1 of 5

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number -Kind Code ² (if known)		
	1	US-3,754,756	08-28-1973	Szigety
	2	US-5,316,480	05-31-1994	Ellsworth
	3	US-5,509,806	04-23-1996	Ellsworth
	4	US-5,682,196	10-28-1997	Freeman
	5	US-5,734,358	03-31-1998	Sumiyoshi
	6	US-5,765,314	06-16-1998	Giglio et al.
	7	US-5,790,124	08-04-1998	Fischer et al.
	8	US-5,805,140	09-08-1998	Rosenberg et al.
	9	US-5,856,811	01-05-1999	Shih et al.
	10	US-5,880,733	03-09-1999	Horvitz et al.
	11	US-5,883,606	03-16-1999	Smoot
	12	US-5,888,069	03-30-1999	Romanoff et al.
	13	US-5,923,307	07-13-1999	Hogle IV
	14	US-5,954,508	09-21-1999	Lo et al.
	15	US-6,020,891	02-01-2000	Rekimoto
	16	US-6,098,549	08-08-2000	Mares
	17	US-6,121,963	09-19-2000	Ange
	18	US-6,126,548	10-03-2000	Jacobs et al.
	19	US-6,140,981	10-31-2000	Kuenster
	20	US-6,160,907	12-12-2000	Robotham et al.
	21	US-6,226,009	05-01-2001	Carraro et al.
	22	US-6,227,121	05-08-2001	Mares
	23	US-6,335,765 B1	01-01-2002	Daly et al.
	24	US-6,359,609 B1	03-19-2002	Kuenster et al.
	25	US-6,377,263 B1	04-23-2002	Falacara et al.
	26	US-6,379,249 B1	04-30-2002	Satsukawa et al.
	27	US-6,386,115 B1	05-14-2002	Mares
	28	US-6,386,985 B1	05-14-2002	Rackham
	29	US-6,408,257 B1	06-18-2002	Harrington et al.
	30	US-6,409,599	06-25-2002	Sprout et al.
	31	US-6,421,462 B1	07-16-2002	Christian et al.
	32	US-6,490,011 B1	12-03-2002	Cooper et al.
	33	US-6,522,312 B2	02-18-2003	Ohshima et al.
Examiner Signature		Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/647,932
				Filing Date	August 26, 2003
				First Named Inventor	PAIR
				Group Art Unit	2673
Examiner Name	LAY, Michelle K.				
Sheet	2	of	3	Attorney Docket Number	28080-109

U.S. PATENT PUBLICATIONS				
Examiner Initials*	Cite No. ¹	Document Number Number -Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	34	US2002/0057280	05-16-2002	Anabuki et al.
	35	US2002/0065635 A1	05-30-2002	Lei et al.
	36	US2002/0066387	06-06-2002	Mares
	37	US2002/0084974	07-04-2002	Ohshima et al.
	38	US2002/0095265 A1	07-18-2002	Satoh et al.
	39	US2002/0133449 A1	09-19-2002	Segal et al.
	40	US2002/0158873	10-31-2002	Williamson
	41	US2003/0025647 A1	02-06-2003	Cooper et al.
	42	US2003/0032484 A1	02-13-2003	Ohshima et al.
	43	US2003/0030658 A1	02-13-2003	Gibbs et al.
	44	US2003/0052965 A1	03-20-2003	Junkins et al.

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T ⁶
	45	FR2603815	03-18-1988	Galvelpor SA (FR)	
	46	JP9187573	07-22-1997	Sozoan:KK	
	47	WO9726643	07-24-1997	Bianchi, Cesare	
	48	WO9858718	12-30-1998	Mares (Meteoro Amusement Corp)	
	49	EP0899690 A3	03-03-1999	Mixed Reality Systems Laboratory Inc.	
	50	AU752518	01-13-2000	Lucent Technologies Inc.	
	51	GB2340330	02-16-2000	Lucent Technologies Inc.	
	52	DE-19954885	06-21-2000	Caterpillar Inc. (US)	
	53	JP2000187447	07-04-2000	Caterpillar Inc. (US)	
	54	DE19909936	09-14-2000	Weber-Perera	
	55	WO0054135	09-14-2000	Weber Perera	
	56	WO0057387	09-28-2000	Sky Fitness Inc. & Feldman, Philip G.	
	57	FR2807527	10-12-2001	Mallet, Bernard	
	58	WO0177751	11-18-2001	Mallet, Bernard	
	59	DE10123849	12-06-2001	Kostjuk, Alexander et al.	
	60	WO0195061	12-13-2001	Frauenhofer Institut fuer Graphische Datenverarbeitung	
	61	DE10042982	03-14-2002	Bleher Johannes A. et al.	
	62	EP1213686	06-12-2002	Mixed Reality Systems Lab	
	63	WO0273287	09-19-2002	Canon KK et al.	
Examiner Signature				Date Considered	

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				First Named Inventor	PAIR
				Group Art Unit	2673
				Examiner Name	LAY, Michelle K.
Sheet	3	of	5	Attorney Docket Number	28080-109

OTHER PRIOR ART – NONPATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
	64	ARANGARASAN R. et al. Modular approach of multimodal integration in a virtual environment. In Proceedings of the Fourth IEEE International Conference on Multimodal Interfaces; Los Alamitos, CA: IEEE Comput. Soc., 2002, pages 331-336. (Abstract only.)	
	65	ASAI K. et al. Multi-screen display with liquid crystal projectors. In Imai H. et al. IMEKO-XV. World Congress. Measurement to Improve the Quality of Life in the 21st Century – Measurement Helps to Coordinate Nature with Human Activities – Vol. X. TEG-17. ISMCR '99 Topical Workshop on Virtual Reality and Advanced Human-Robot Systems; Budapest, Hungary: IMEKO, 1999, pages 253-258. (Abstract only.)	
	66	AZUMA R. et al. Recent advances in augmented reality. IEEE Computer Graphics and Applications, Vol. 21, No. 6, (Nov.-Dec. 2001): pages 34-47. (Abstract only.)	
	67	BIMBER O. et al. Occlusion shadows: Using projected light to generate realistic occlusion effects for view-dependent optical see-through displays. In Proceedings of the IEEE and ACM International Symposium on Mixed and Augmented Reality; Los Alamitos, CA: IEEE Comput. Soc., 2002, pages 186-319. (Abstract only.)	
	68	BLANKE W. et al. Active visualization in a multidisplay immersive environment. In Sturzlinger W. et al. Virtual Environments 2002. Eurographics Workshop Proceedings; New York: ACM, 2002, pages 103-220. (Abstract only.)	
	69	BUTZ A. et al. Enveloping users and computers in a collaborative 3D augmented reality. In Proceedings 2nd IEEE and ACM International Workshop on Augmented Reality (IWAR '99); Los Alamitos, CA: IEEE Comput. Soc., 1999, pages 35-44. (Abstract only.)	
	70	COLUCCI D. et al. The VisionDome: Fully immersive VR, in a simple, scalable, and collaborative environment. In Society for Information Display 1999 International Symposium; Santa Ana, CA: Soc. Inf. Display (SID), 1999, CD-ROM p. 620-623. (Abstract only.)	
	71	DAILY MJ et al. The "CABANA": a re-configurable spatially immersive display. In Bullinger, H-J et al. 3d International Immersive Projection Technology Workshop. Vol. T 52; Heidelberg, Germany: Springer-Verlag, 1999, pp. 123-32. (Abstract only.)	
	72	DEERING M.F. et al. Exploration of display interfaces for virtual reality. In IEEE Virtual Reality Annual International Symposium (Cat. No. 93 CH 3336-5); New York, IEEE, 1993, pages 141-147. (Abstract only.)	
	73	DEISINGER J. et al. Case studies evaluating the quality of synthetic environments. Proceedings of the SPIE – The International Society for Optical Engineering, Vol. 3643, 1999: pages 101-108. (Abstract only.)	
	74	ECKEL G et al. Benches and caves [virtual reality]. In IECON '98. Proceedings of the 24th Annual Conference of the IEEE Industrial Electronics Society (Cat. No. 98CH36200); New York: IEEE, 1998, pages 1996-1999 (vol. 4). (Abstract only.)	
	75	ENCARNACAO I.M. et al. Walk-up VR: Virtual reality beyond projection screens. IEEE Computer Graphics and Applications, Vol. 20, no. 6, (Nov.-Dec. 2000): pages 19-23. (Abstract only.)	

Examiner Signature	Date Considered
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				Examiner Name	LAY, Michelle K.
Sheet	4	of	5	Attorney Docket Number	28080-109

OTHER PRIOR ART – NONPATENT LITERATURE DOCUMENTS		
76	ENCARNACAO L.M. et al. Seamless 3D interaction for virtual tables, projection planes, and CAVES. Proceedings of the SPIE – The International Journal for Optical Engineering, vol. 4022, (2000): pages 177-188. (Abstract only.)	
77	FEINER S. et al. Wearing it out: First steps toward mobile augmented reality systems. In Ohta, Y. et al.; Mixed Reality. Merging Real and Virtual Worlds; Tokyo: Ohmsha, 1999, pages 363-377. (Abstract only.)	
78	FERREIRA A.G. et al. Multiple display viewing architecture for virtual environments over heterogeneous networks. In Stolfi J. et al. XII Brazilian Symposium on Computer Graphics and Image Processing (Cat. No. PR00481); Los Alamitos, CA: IEEE Comput. Soc. 1999, pages 83-91. (Abstract only.)	
79	FUKUDA T. et al. Collaboration support system for community design based on VR technology. MEW Technical Report, no. 77, (March 2002): pages 63-68. (Abstract only.)	
80	HERELD M. et al. Introduction to building projection-based tiled display systems. IEEE Computer Graphics and Applications, Vol. 20, No. 4, July-Aug 2000: pages 22-28. (Abstract only.)	
81	HIROSE M. et al. Development and evaluation of immersive multiscreen display "CABIN." Transactions of the Institute of Electronics, Information and Communication Engineers D-11 J81D-11, no. 5, May 1998: 888-896. (Abstract only.)	
82	HIROSE M. et al. Development of an immersive multiscreen display (CABIN). Annual Report of Engineering Research Institute, School of Engineering, University of Tokyo 56, Sept 1997: 135-142 (Abstract only.)	
83	HIROSE M. Immersive projection technology and wearable computers. COMPEL – The International Journal for Computation and Mathematics in Electrical Engineering, Vol. 19, No. 4, (2000): pages 1024-1035. (Abstract only.)	
84	HOFFMEISTER K. et al. Developing world-class immersive environment facilities. In Bullinger, H.-J. et al. 3rd International Immersive Projection Technology Workshop. Vol. T 52; Heidelberg: Springer-Verlag, 1999, pages 113-121. (Abstract only.)	
85	ISABELLE S.K. et al. Defense applications of the CAVE/sup TM/ (CAVE Automatic Virtual Environment). Proceedings of the SPIE – The International Society for Optical Engineering, Vol. 3057 (1997): pages 118-125. (Abstract only.)	
86	JALKANEN J. et al. How to build a virtual room. Proceedings of the SPIE – The International Society for Optical Engineering 4297, (2001): pages 475-485. (Abstract only.)	
87	KIJIMA, R. et al. Distributed display approach using PHMD with infrared camera. Proceedings IEEE Virtual Reality 2002, Los Alamitos, CA: IEEE Comput. Soc., 2002, pages 33-40. (Abstract only.)	
88	KLOSOWSKI J.T. et al. Deep view: high-resolution reality. IEEE Computer Graphics and Applications, vol. 22, no. 3, (May-June 2002): pages 12-15. (Abstract only.)	
89	LANGHANS K. et al. New portable FELIX 3D Display. Proceedings of the SPIE – The International Society for Optical Engineering 3296, (1998): pages 204-216. (Abstract only.)	
90	LIA W-J et al. A PC-based distributed multiple display virtual reality system. Displays, Vol. 22, No. 5, (Nov. 2001): pages 177-181. (Abstract only.)	

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				Examiner Name	LAY, Michelle K.
Sheet	5	of	5	Attorney Docket Number	28080-109

OTHER PRIOR ART – NONPATENT LITERATURE DOCUMENTS		
91	MORIYA T. et al. Image generation for immersive multi-screen environment with a motion ride. In Takemura H. et al. Proceedings of the IEEE Virtual Reality 2001; Los Alamitos, CA: IEEE Comput. Soc. 2001, pages 297-298. (Abstract only.)	
92	NITZSCHE N. et al. Mobile haptic interaction with extended real or virtual environments. In Proceedings of the 10th IEEE International Workshop on Robot and Human Interactive Communication. ROMAN 2001 (Cat. No. 01TH8591); Piscataway, NJ: IEEE, 2001, pages 313-318. (Abstract only.)	
93	NOELLE S. Stereo augmentation of simulation results on a projection wall by combining two basic ARVIKA systems. In Proceedings of the IEEE and ACM International Symposium on Mixed and Augmented Reality; Los Alamitos, CA: IEEE Comput. Soc., 2002, pages 271-322. (Abstract only.)	
94	OGI T. et al. CABINet: Networking of immersive projection environment. In Bullinger, H-J et al. Human-Computer Interaction: Ergonomics and User Interfaces. Proceedings of HCI International '99 (8th International Conference on Human-Computer Interaction); Mahwah, NJ: Lawrence Erlbaum Associates, 1999, 2 vol. pp. 1025-1029. (Abstract only.)	
95	PAIR J et al. FlatWorld: Combining Hollywood set-design techniques with VR. IEEE Computer Graphics and Applications, Vol. 23, No. 1, Jan-Feb 2003: pages 12-15. (Abstract only.)	
96	RASKAR R. et al. The Office of the future: A Unified approach to image-based modeling and spatially immersive displays. In Computer Graphics. Proceedings. SIGGRAPH 98 Conference Proceedings; New York: ACM, 1998, pages 179-188. (Abstract only.)	
97	SCHNADELBACH H. et al. The Augurscope: A Mixed reality interface for outdoors. In Conference Proceedings. Conference on Human Factors in Computing Systems. CHI 2002; New York: ACM, 2002, pages 9-16. (Abstract only.)	
98	SHIBANO, N et al. VR presentation system with spherical screen for urban environment human media. MEW Technical Report no. 74, May 2001, pages 56-61 (Abstract only.)	
99	TAKEDA H. et al. Multi screen environment with a motion base. In Heudin, J.-C., Virtual Worlds. Second International Conference, VW 2000. Proceedings (Lecture Notes in Artificial Intelligence Vol. 1835); Berlin, Germany: Springer-Verlag, 2000, pages 303-312. (Abstract only.)	
100	TRAMBEREND H. A display device abstraction for virtual reality applications. In Proceedings AFRIGRAPH 2001. 1st International Conference on Computer Graphics, Virtual Reality and Visualisation; New York, NY: ACM, 2001, pages 75-80. (Abstract only.)	
101	WEGMAN E. Affordable environments for 3D collaborative data visualization. Computing in Science & Engineering, Vol. 2, No. 6, (Nov-Dec 2000): pages 68-72. (Abstract only.)	
103	WRIGHT D. Survey of projection-based immersive displays. In Proceedings of the SPIE – The International Society for Optical Engineering, 3957, 2000: pages 482-492. (Abstract only.)	

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